

Replaced on 07 MAR 02

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ART 34 / EADTClaims

1. A process for forming an electrically conducting film on a substrate,
comprising, depositing metal particles and metal-chelates, mixed or separately,
on a substrate to form a thin film composite, treating the composite sufficient
to cause the decomposition of the metal chelate, and forming an electrically
conducting film assemblage wherein decomposition products of the metal
chelate form a conductive bond.
2. The process of claim 1 wherein treating the composite is by heat.
3. The process of claim 1 wherein treating the composite is by photolytic action.
4. A process for forming an electrically conducting film on a substrate,
comprising, mixing metal particles and metal-chelates in a solvent, depositing
the mixture on a substrate, evaporating the solvent, decomposing the
metalchelates, and bonding of the metal particles by the metal-chelate
decomposition products.
5. The process of claim 2 wherein the particle metal is nickel.
6. The process of claim 3 wherein the metal-chelate is selected from a group
consisting of metal carboxylates, metal β -diketonates, metal amides, metal
organometallics and metal alkoxides.
7. The process of claim 4 wherein the metal-chelate complex metal is
nickel(cyclooctadiene)₂.
8. The process of claim 5 wherein the substrate is zinc oxide.
9. The process of claim 6 wherein decomposing the metal-chelate is by heating in
air.
10. The process of claim 7 wherein heating is less than 200°C for 2 minutes.
11. The process of claim 1 wherein the particles comprise nanoparticles having
a size in the range of 1-10 nm.
12. The process of claim 4 wherein the particles comprise nanoparticles having
a size in the range of 1-10 nm.